In re Patent Application of:
KASPER ET AL.
Serial No. **10/785,372**
Filing Date: **Feb. 24, 2004**

_230/230 r 230-1_
_235_
overflow buffer length
scan
congestion
discard
drop

In the Claims:

Claims 1-37   (CANCELLED)

38.   (ORIGINAL)   A method for controlling flow of network data arranged in frames and minimizing congestion, comprising the steps of:

generating a status error indicator within a buffer of a network device indicative of a frame overflow within the buffer;

Error Flag

in response to the status error indicator, generating an early congestion interrupt to a host processor indicative that a frame overflow has occurred within the buffer; and

generating instructions from the host processor to buffer for discarding the incoming frame that has caused the frame overflow within the buffer.

39.   (ORIGINAL)   A method according to Claim 38, and further comprising the step of setting early congestion notification bits within an interrupt register of a memory in the network device after generating the status error indicator within the buffer.

40.   (ORIGINAL)   A method according to Claim 39, and further comprising the step of generating from the memory an early congestion notification interrupt to the host processor to discard the incoming frame that has caused the frame overflow within the buffer.

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41. (ORIGINAL) A method according to Claim 39, and further comprising the step of generating the early congestion notification interrupt from the memory along a system bus.

42. (ORIGINAL) A method according to Claim 38, and wherein the status error indicator is generated by generating a status error bit.

43. (ORIGINAL) A method according to Claim 38, wherein the status error bit is generated by setting a flip-flop.

44. (ORIGINAL) A method according to Claim 38, wherein the step of generating the status error indicator within the buffer further comprises the step of setting an overflow bit within the buffer indicative of an overflow condition.

45. (ORIGINAL) A method for controlling flow of network data arranged in frames and minimizing congestion, comprising the steps of:

generating a status error indicator within a buffer of a network device indicative of a frame overflow within the buffer;

in response to the status error indicator, generating an early congestion interrupt to a host processor indicative that a frame overflow has occurred within the buffer and setting early congestion notification bits within the network device after generating the status error indication within the memory;

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generating instructions from the host processor to the buffer for discarding the incoming frame that has caused the frame overflow within the buffer; and

enhancing the servicing of frames received within the buffer by one of either increasing the number of words of a memory burst size or modifying the time-slice of other active processes.

46. (ORIGINAL) A method according to Claim 45, and further comprising the step of setting early congestion notification bits within an interrupt register of a direct memory access unit from control signals generated by the communications processor.

47. (ORIGINAL) A method according to Claim 46, and further comprising the step of generating from the memory an early congestion notification interrupt to a host processor to discard the incoming frame that has caused the frame overflow within the buffer.

48. (ORIGINAL) A method according to Claim 46, and further comprising the step of generating the early congestion notification interrupt from the direct memory access unit along a system bus.

49. (ORIGINAL) A method according to Claim 45, and wherein the status error indicator is generated by generating a status error bit.

50. (ORIGINAL) A method according to Claim 49, wherein the status error bit is generated by setting a flip-flop.

51. (ORIGINAL) A method according to Claim 45, wherein the step of generating the status error indicator within the FIFO memory further comprises the step of setting an overflow bit within the FIFO memory indicative of an overflow condition.

52. (ORIGINAL) A method for controlling flow of network data arranged in frames and minimizing congestion, comprising the steps of:

generating a status error indicator within a buffer of a network device indicative of a frame overflow within the buffer;

generating from the buffer an early congestion interrupt to a communications processor in response to the status error indicator;

processing the interrupt and setting at least one early congestion notification bit within an interrupt register of a memory;

generating an early congestion interrupt from the memory to a host processor indicative that a frame overflow has occurred within the buffer; and

generating instructions from the host processor to the buffer to discard the incoming frame that has caused the frame overflow.

53. (ORIGINAL) A method according to Claim 52, and further comprising the step of generating the early congestion notification interrupt from the memory along a system bus.

54. (ORIGINAL) A method according to Claim 52, and wherein the status error indicator is generated by generating a status error bit.

55. (ORIGINAL) A method according to Claim 54, wherein the status error bit is generated by setting a flip-flop.

56. (ORIGINAL) A method according to Claim 52, wherein the step of generating the status error indicator within the buffer further comprises the step of setting an overflow bit within the buffer indicative of an overflow condition.

57. (ORIGINAL) An apparatus for controlling flow of network data arranged in frames and minimizing congestion comprising:
    a buffer;
    a memory having an interrupt register and early notification bits that are set in response to a status error indicator corresponding to an overflow within the buffer; and
    a host processor for receiving an early congestion interrupt from the memory and generating instructions to the buffer to discard the incoming frame that has caused the frame overflow.

58. (ORIGINAL) An apparatus according to Claim 57, and further comprising a system bus connecting the memory with the

host processor and on which the early congestion notification
interrupt passes.

59.   (ORIGINAL)   An apparatus according to Claim 57,
wherein the status error indicator comprises a status error
bit.

60.   (ORIGINAL)   An apparatus according to Claim 57, and
further comprising a flip-flop that is set to indicate the
status error bit.

61.   (ORIGINAL)   An apparatus according to Claim 57, and
further comprising means for setting an overflow bit within
the memory indicative of the overflow condition.

62.   (ORIGINAL)   An apparatus for controlling flow of
network data arranged in frames and minimizing congestion
comprising:

a buffer;

a memory having an interrupt register and early
notification bits that are set in response to a status error
indicator corresponding to an overflow within the buffer;

a host processor for receiving an early congestion
interrupt from the memory and generating instructions from the
host processor to the buffer to discard the incoming frame
that has caused the frame overflow; and

means for enhancing the servicing of received frames by
one of either increasing the number of words of the memory
burst size or modifying the time-slice of other active
processes.

63. (ORIGINAL) An apparatus according to Claim 62, and further comprising a system bus connecting the memory with the host processor and on which the early congestion notification interrupt passes.

64. (ORIGINAL) An apparatus according to Claim 62, wherein the status error indicator comprises a status error bit.

65. (ORIGINAL) An apparatus according to Claim 62, and further comprising a flip-flop that is set to indicate the status error bit.

66. (ORIGINAL) An apparatus according to Claim 62, and further comprising means for setting an overflow bit within the buffer indicative of the overflow condition.

67. (ORIGINAL) A network device for controlling network data congestion, comprising:

means for generating a status error indicator within a buffer indicative of a frame overflow within the buffer;

means for reading the status error indicator and, in response, generating an early congestion interrupt to a host processor indicative that a frame overflow has occurred within the buffer and generating instructions from the host processor to the buffer to discard an incoming frame causing the overflow; and

means for discarding the incoming frame that has caused the frame overflow within the buffer.

68.   (ORIGINAL)   A network device according to Claim 67,
and further comprising a memory, and further comprising an
interrupt register having early congestion notification bits
that are set to indicate the overflow condition.